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United States Patent [19]

Hallenbeck et al.

Patent Number: [11]

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Date of Patent: [45]

Dec. 7, 1999

VECTORS FOR TISSUE-SPECIFIC REPLICATION

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[73] Assignee: Genetic Therapy, Inc., Gaithersburg,

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[51]	Int. Cl.6		C12N	15/00
[52]	IIS CL	435/325: 514/4	4. 474/	03 21.

536/23.1; 435/69.1; 435/320.1; 435/455

[58] Field of Search 435/172.3, 320.1, 435/325, 455, 69.1; 514/44; 424/93.21; 536/23.1; 935/33, 52, 55, 66

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[57] ABSTRACT

The invention generally relates to targeted gene therapy using recombinant vectors and particularly adenovirus vectors. The invention specifically relates to replicationconditional vectors and methods for using them. Such vectors are able to selectively replicate in a target tissue to provide a therapeutic benefit from the presence of the vector per se or from heterologous gene products expressed from the vector and distributed throughout the tissue. In such vectors, a gene essential for replication is placed under the control of a heterologous tissue-specific transcriptional regulatory sequence. Thus, replication is conditioned on the presence of a factor(s) that induces transcription or the absence of a factor(s) that ihibits transcription of the gene by means of the transcriptional regulatory sequence with this vector; therefore, a target tissue can be selectively treated.

20 Claims, 5 Drawing Sheets